

The Evolution of Institutional Structure of Italian Agriculture: A Historical Reconstruction through the Debate on Agricultural Holdings Classification

Benedetto Rocchi and Gianluca Stefani

Department of Agricultural and Resource Economics, University of Florence



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1. INTRODUCTION

Despite the permanent prevalence of family farming, during the XX^o century the evolution of the institutional structure of the Italian agriculture has been noticeable. After the industrial development of the Italian economy, the progressive disappearance of sharecropping, the emergence of part-time farming and other forms of agriculture (where multifunctionality means that income is only one of the objectives that the family assigns to the management of the holding) have given rise to a wide differentiation within the area of family farming.

With respect to this evolution the classification used in official surveys on structure and economic results of agricultural holdings is still based on the nature of the relationship existing between land ownership, labour and entrepreneurial function, following criteria defined during the first half of the XX century (Serpieri 1941). Till the second WW this approach has been effective in identifying institutional typologies involved in agricultural production, appropriately characterizing different areas of agriculture. Nevertheless, the subsequent structural dynamic of the sector has progressively reduced the ability of classification typologies to investigate the real world. As a consequence, in the last Census of Agriculture, over 90% of holdings have been classified within the same group as direct farming on own land (farms run directly by farmer).

The increasing inability of traditional typologies to represent a useful tool for analytical purposes has been widely debated during the last few decades by Italian agricultural economists. Changes of the institutional structure of the Italian agriculture can be characterized through a critical review of this literature. In this paper, following an historical approach, the evolution in concepts and categories used to describe and analyze the dynamic of agricultural structures will be the basis for a discussion of then main methodological issues implied in building classification typologies. A particular emphasis will be given to the role that theoretical frameworks play in the clear definition of farm classification (Whatmore *et al.* 1987). Moreover it will be stressed the importance, for structural analysis purposes, of developing new typologies within the general approach to the classification of institutions adopted in national accounting systems (Hill 1998).

The paper is structured as it follows. A first paragraph will be devoted to outline the evolution of the institutional features of Italian Agriculture as it emerges from the debate on farm typologies. A critical review of the theoretical framework that underpins some of the proposed classification will follow. Drawing on this discussion, some desirable features that a typology of agricultural holdings for structural analysis purpose should have will be proposed (par 3). To better illustrate our position in the paragraph 4 a typology recently proposed for the analysis of data collected during the last Census of Agriculture will be presented (Pagni *et al.* 2004). Final remarks will follow in paragraph 5.

2. THE EVOLUTION OF THE INSTITUTIONAL STRUCTURE OF ITALIAN AGRICULTURE THROUGH THE DEBATE ON FARM CLASSIFICATION

Cecchi (1994) suggests that the debate on agricultural holdings classification among the Italian agricultural economists may be divided into three main phases.

During the first period, roughly corresponding to the first half of XX^o century, it was defined and widely accepted a typology that has been used so far to classify holdings in

official censuses and surveys by Italy's National Statistical Institute. This classification addressed the concerns of policy makers about the relationships between social classes in the rural context and the process of income distribution. Such a typology, based on the fundamental works of Arrigo Serpieri (1929, 1941, 1947), differentiates agricultural holdings on the basis of the relationship existing between entrepreneur and other subjects bringing factors of production (labour and land) and involved in the production process.

After the Second WW, in paralleling the process of transformation of the Italian economy into an industrial one (60ties and 70ties), a renewed interest on classification issues arose. Agricultural economists became more and more aware that new categories were necessary to understand the structural dynamic involving agriculture (Nacamuli, 1973). New typologies were proposed and applied to the analysis with the aim of differentiating peasant and capitalistic forms of agriculture and highlighting the dualistic structure of Italian agriculture. Even if the majority of contributions were developed within the theoretical framework of Marxian analysis of capitalistic development², the dyad peasant/capitalistic was used to characterize different areas of agriculture also in studies developed within a different framework notably the neoclassic theory of production.

Over the 80ties a new turn in the debate can be recorded. As far as the process of development of the Italian economy showed its peculiar features, with an increasing role played by SME within local developing systems (Bagnasco 1977, Becattini, 1989) also the area of family farming appeared more and more differentiated by forms of part-time farming, pluriactivity of the agricultural households, different levels of professionalism and the diffusion of contract works in agriculture. In this context new typologies were proposed with the aim of analyzing the degree of integration/marginalization of agriculture within the context of a widespread industrialization process.

In the next paragraphs, through the discussion of the different classification schemes for agricultural household proposed during each of three phases, a first account of the institutional evolution of agricultural farms in Italy will be given.

2.1 Management forms in agriculture

The fundamental contribution to the theoretical foundation of the "management forms" typology (and to the methodology issues regarding its empirical implementation) was carried out by Arrigo Serpieri (1929, 1941, 1947). This typology draws on institutional features of the agricultural production units (Serpieri 1947), concerning the relationships existing between the entrepreneur (generally identified with the capitalist) and other agricultural holding stakeholders: workers and land owners. The Serpieri's classification is defined along three fundamental axes: i) the distinction between integral (that is united) and shared forms of entrepreneurship (to account for the share tenancy forms that over the first half of XX^o century represented a large share of the Italian agriculture); ii) the relationship existing between entrepreneurship and labour (capitalistic vs. peasant farming); iii) the form of land tenure (ownership vs rented land). The combination of these three dimensions leads to six typologies of agricultural business (Serpieri 1947: 10):

1. Integral agricultural business (run directly by the farmer)
 - a. capitalistic (run with wage earning staff only)
 - i. on own land
 - ii. on rented land
 - b. peasant (run with both family and external labour)
 - i. on owned land
 - ii. on rented land
2. Shared agricultural business (share tenancy forms)
 - i. on owned land
 - ii. on rented land

Besides dealing with the needs of policy makers at the time³ it was proposed, this classification was valuable insofar as it was built on directly observable institutional features. A wide gamma of possible institutional structures emerged from the simple combination of few contractual forms about land and labour. This probably is the cause of the persistence of the typology in official surveys carried out in Italy agriculture along the XX^o century⁴

In any case it is worthwhile stressing its substantial adherence to the socio-economic features of the sector at the time it was proposed. It must be acknowledged that the different legal forms of farm management, corresponded to specific socio-economic groups involved in the production activity. As a consequence, the institutional features of the sector, at the time still accounting for more than half of GDP and employment, could be accurately depict.

Insofar as different management forms are able to discriminate between different socio-economic subjects involved in farming, the derived typology of agricultural holdings is an effective one. In other words, different groups of holdings defined on this basis would show different structural features and specific ways to manage the production process, as a result of choices made to achieve socially differentiated goals. A huge amount of empirical work during the first half of '900 has been carried out to improve the knowledge of agriculture using the Serpieri's typology as a fundamental key of lecture. In the works published during the first decade of life (from 1946) of the *Rivista di Economia Agraria*, the form of management typology was substantially accepted as the most effective way to classify agricultural holdings for sector analysis.

As stated above one of the fundamental axis of classification was the distinction between *peasant* and *capitalistic* farming typologies according with the position of the entrepreneur with respect to labour. The criteria proposed by Serpieri, (i.e. to classify as peasant *all* holdings where the entrepreneur with his family provided the *manual* labour to the production process, regardless of the amount of external labour actually hired) was the simplest from an operational point of view. Nevertheless, the choice was founded on the assumption that the exercise of manual work in agriculture could really discriminate between different social groups. This was the Serpieri's belief in writing about the distinction between peasant and capitalistic management forms: "There are no doubt that, in the social structure of Italian agriculture, the difference between those which give to land *also* manual labour and those which give *only* non-manual labour is clear and fundamental" (Serpieri 1947: 18; our translation, italics by the author). At the time the typology was proposed, the relevance of sharecropping as an alternative to hired labour to regulate relationships between capitalists and farm workers made the classification criteria proposed by Serpieri effective despite its simplistic feature. However, with the substantial disappearance of sharecropping as a relevant management form from the 60ties onwards, this feature of the typology was increasingly criticized, as it caused the inclusion in the "direct farming" class of the vast majority of agricultural holdings.

2.2 The debate on peasant agriculture

During the 60ties the Italian economy definitively developed into an industrial one. This deep structural dynamic involved also agriculture: on the one side as a reserve of labour for the growing manufacturing sector; on the other side as a growing market for industry products, as far as the spread of technical progress through the agriculture pushed up the demand for intermediate inputs. In this context the focus of policy makers on agriculture shifted towards issues related to the so-called modernization of the sector as well as to the limitation of social conflicts in the rural areas. One fundamental choice in agricultural policy was the progressive limitation by law of sharecropping contracts paralleled with the substantial support to the spread of farmer's ownership of land (agrarian reform and support to land purchase (Giorgetti, 1974).

The joint effect of structural change and sectoral policy through the 50ties and the 60ties was a progressive polarization of the sector around two models of agriculture, peasant and capitalistic, with different features in terms of factors endowment and technological pattern.

Such process is well represented by the debate among the agricultural economists on the *dualistic structure* of the Italian agriculture. One of the major issues was the exact definition, from an empirical point of view, of the two different areas. Most of the works concerning the revision of classification criteria was developed within the framework of the Marxian analysis of development processes. Several authors from this background (Sereni 1946, Daneo 1969) argued that the connection of the peasant model of farming with the increasing share of holdings classified by Istat as direct farming on own land, had led to a misleading interpretation of social processes in act. To analyze the process of proletarianisation connected with the capitalistic development of agriculture, the prevailing class of family farming had to be split to support the analysis of peasant holdings on the basis of production relationships. In this context the share of hired labour became the fundamental axis of classification together with capital endowment and level of integration in the market system (Bertolini and Meloni 1978b). In contrast with other empirical works directed at showing the growing importance of family farming in agriculture (Barberis and Siesto 1974), several contributions were proposed to depict the differentiation within the direct farming area, using a variety of criteria to discriminate among different typologies (Fabiani and Gorgoni 1972, Bolaffi e Varotti 1974). The aim of these works was to bring into the fore the structural difference between capitalistic and peasant holdings and the progressive widening of it, as the process of capitalistic development of agriculture was going on. In the following table, quoted by the work of Bolaffi and Varotti (1974), the relative importance of different areas of farming measured by number of farms and agricultural area utilization is shown. Peasant area of farming is divided in three sub-group, on the basis of different values of the ratio between family and hired labour (pure peasant vs peasant capitalistic, while the segment of peasant-wage earner includes smaller farms in terms cultivated area). It is worthwhile to contrast these figures with the official data of 1970 Census of Agriculture which recorded more than 85% of holdings (and more than 65% of land) in the group of direct farming on own land. Adopting this typology the capitalistic forms of agriculture increase from 27% of the official data to more than 40% of UAA.

TABLE 1 Number and relative Utilized Agricultural Area by typology
Italy 1970 – Column Percentage Value

| Farm typology | Number of farms | UAA |
|-----------------------|-----------------|-------|
| Peasants-wage earners | 40,5 | 9,2 |
| Peasant | 38,0 | 42,7 |
| Peasant capitalistic | 5,2 | 8,1 |
| Share tenancy | 5,4 | 6,2 |
| Capitalistic | 10,9 | 33,8 |
| Total | 100,0 | 100,0 |

Source: (Bolaffi and Varotti 1974)

The causes of structural differentiation between peasant and capitalistic agriculture have been discussed from different theoretical point of view. In the Marxian perspective the process of capitalistic accumulation leads to a progressive marginalization of peasant farms (Pugliese and Rossi 1978) and to forms of hidden proletarianisation of peasant labour. The dualistic evolution of the sector, however, has been interpreted also within the framework of the neoclassic theory of production, basically as an outcome of different position of peasant farms with respect to capital and labour market together with asymmetries in the initial factors endowment (Cosentino and De Benedictis 1976, Gorgoni 1977, Gorgoni 1980).

2.3 Household strategies in farming and functional pluralism in agriculture

Towards the end of the 70ties the peculiar features of the Italian economic development and the increasing importance assumed by networks and clusters of small and medium enterprises began to unfold (Bagnasco 1977). The agricultural sector was affected as well. In the areas of SME industrialization new forms of family farming emerged. These could hardly be interpreted within the peasant concept, at least with the meaning the previous debate had assigned to the word. The result of a survey on Modena province (Brusco 1979), an area of Emilia Romagna (characterized at the end of 70ties by one of the higher level of economic development in Italy) are a good example of such an evolution. Besides the usual typologies a new group of *part-time farming* was proposed to characterize situations in which farm labour is only one among several sources of income within the household⁵. The cited work can be considered paradigmatic of a turn of perspective within agricultural economic studies. One of the main findings was that "...at least with reference to the studied area, identifying part time farms with low-income lacks of empirical foundation" (Brusco 1979: 25). Following the interpretation proposed by the author, in an advanced phase of capitalistic development, farming tends to assume the same role of other forms of self-employed labour. As a consequence part time farming and pluriactivity could no longer be considered simply an outcome of progressive marginalization of peasant agriculture in a developing market economy; their ubiquitous nature as forms of efficient family farming asked for new interpretative categories.

Thus, the debate on agricultural holdings classification turned towards the overall income strategies of the households, as an effective way to characterize different forms of farming. While in the previous literature the focus had been on structural features of the holdings (such as: labour use and composition, capital labour ratio, economic dimension of the holding), now the agricultural households characteristics became more and more central in the analysis. The problem of the allocation of family labour between in-farm and off-farm activities was analyzed both within the neoclassical framework and through a rediscovery of the contribution of Chayanov on the relation between capitalistic accumulation in agriculture and family cycles and structures⁶.

Attempts to classify different typologies of family farming were carried out in several studies. One of the most influential was developed within the European research programme on farm structure and pluriactivity carried out by the Arkleton Trust at the beginning of the 90ties. Following a methodology defined at an European level (Arkleton Trust 1991) holdings surveyed in three different Italian regions (De Benedictis 1990) were classified in accordance with a series of variables able to depict the "structural situation" of the managing households. It is worth noticing that the set of variables was comprehensive both of data about household features (members, age, level of education), household income strategies (allocation of family work, income composition) as well as agricultural holdings characteristics (business size, farming diversification, presence of debts) (Arkleton Trust 1991: 4). Grouping of holdings was carried out using cluster analysis methods. Many of the following interpretations of part time, pluriactivity and "farm-household" typologies have been developed drawing on the result of this work⁷.

The availability of micro-data from 1990 agricultural Census made possible to apply the new concepts to the universe of farms as well. Fabiani and Scarano (1995) proposed a socio-economic stratification of agricultural holdings that even if based on structural data from Census was interpreted within the "household-farm" framework. Following (Corsi 1990) the *household-farm* is defined by the authors as the connexion between a production unit (the agricultural holding) and a consumption unit (the household). According to this view, only focussing on household-farm unit makes possible to account for the wide variety of goals achieved with agricultural production. Moreover this "functional pluralism" of agricultural production may be analysed in a context of geographically differentiated patterns of development.

From an empirical point of view, the universe of holdings was stratified by defining a series of boundaries for economic size (measured in term of European Size Unit of Standard Gross Margin), age, level of education and access to product markets. The original feature of this approach is the wide use of economic size to split the sector into two major groups referred to as professional units (i.e. holdings with a standard gross margin sufficient to employ one full time work unit) and pluriactive/accessory units. Table 2 shows the distribution of farms, Utilized Agricultural Area, Standard Gross Margin and Worked Days across typologies.

TABLE 2 Number and relative Utilized Agricultural Area, Standard Gross Margin and Worked Days by typology

| Farm typology | Number of farms | UAA | SGM | WD |
|-------------------------------------|-----------------|-------|-------|-------|
| Self consumption old farmers | 12,1 | 2,7 | 1,6 | 4,5 |
| Market old farmers | 39,9 | 17,9 | 12,6 | 25,3 |
| Accessory with residential function | 21,2 | 5,9 | 3,7 | 9,4 |
| De-activate accessory | 7,0 | 3,3 | 2,4 | 4,6 |
| Pluricative accessory | 3,7 | 3,8 | 3,0 | 4,8 |
| Pluriactive professionals | 4,6 | 7,9 | 6,5 | 8,7 |
| Esclusive professionals | 6,0 | 18,2 | 18,5 | 16,9 |
| Capital accumulation professionals | 5,5 | 40,2 | 51,7 | 25,9 |
| Total | 100,0 | 100,0 | 100,0 | 100,0 |

Source: (Fabiani and Scarano 1995)

The same categories were recently used in some works (Sabbatini and Turri 1996, Marinelli et al 1998) carrying out a multivariate analysis on Census data. In these works a wide battery of variable referred to structural features, institutional characteristics and productive orientation of the holdings was used as input of multivariate techniques of data analysis⁸. The resulting stratification of holdings was then interpreted using concepts and categories proposed in previous debates on different forms of family farming as professionalism, pluriactivity, part-time and accessory farming.

Two main institutional features of the Italian agriculture at the end of the XX^o century emerge from these strain of literature. The first is the persistence of the family farming as the most important form of management in agriculture. Not only is the majority of holdings managed by individual workers, but also capitalistic farms rely on a “household work strategy” (Arkleton Trust 1991: 43).. Secondly, the universe of holdings that forms agriculture as a production sector includes also a great number of farms that pursue agricultural production with other objectives than income.

To account for this particular feature, the concept of omologation vs non-omologation (Basile and Cecchi 1992) has been suggested to distinguish forms of agriculture based on economic criteria and absolving to a productive function, from other forms. At the same time it same has been argued that as far as technical progress and flexibility in the use of factors have been largely improved through the time, high productivity and an efficient use of resource could be not strictly related with larger size of the holdings (Fabiani and Scarano 1995). For the same reasons it is no longer possible to find an exact correspondence between the structural characteristics of the holdings and the social position of the corresponding household, above all in areas where economic development provides households with income opportunities in off farm activities.

3. A CRITICAL ASSESSMENT

Some critical comments can be made on the evolution of the studies about the classification of agricultural holdings.

A first remark is about the changing definition of the unit of investigation within the proposed typologies. Serpieri basically proposed a typology of *entrepreneurs*: following his approach, through different contractual arrangements by which production activity can be managed, it is possible to identify different typologies of agricultural entrepreneurs, with a clear social identity. Conversely with the debate on dualism between peasant and capitalistic agriculture, the focus shifts towards structural features of agricultural *holdings*. Quite surprisingly, both contributions from Marxian and neoclassic perspectives find in the factor endowment of farms (hired vs family labour, access to and availability of capital) the main cause of the different paths of evolution of agricultural structures. Finally, in the last period the attention turn again on the institutional dimension of agriculture in the attempt to account for the extreme fragmentation of the area of family farming. In the classifications proposed within this last group of studies the agricultural holding become only one aspect of the structural description of the agricultural household, contributing to an overall income strategy.

A sort of fluctuation between institutional and structural features of agriculture seems to be in act. From this point of view it is worthwhile stressing that a classification of holdings as support to sector analysis would be based on institutional features. Once a sector of the economy has been identified on the basis of the nature of production process, as in the case of agriculture⁹, it is the nature of institutions operating in that sector that become relevant for the analysis of different economic behaviours. The conceptual separation between technical and institutional criteria of classification for analytical purposes is clearly stated by national accounting standards, following which the economy can be subdivided by productive and institutional sectors (Hill 1998). From this point of view not always, in the debate that has been outlined before, the institutions has been clearly stated as the object of classifications. The same concept of “household-farm”, in spite of its emphasis on institutional features of farming, is ambiguous in itself. At the same time the joint use of structural *and* institutional variables as input for classification of holdings with multivariate methodologies could lead to problems in the interpretation of the results.

A second point is about the definition of the theoretical framework within which each typology has been developed. In the most recent contributions, with the increasing availability of information and calculation capability seems to emerge an approach that can be defined as “positivist” (Whatmore et al, 1987): different strata are identified starting from regularities in the observed socio-economic phenomena, and subsequently interpreted on the basis of the theory. An opposite logic could be followed, defining different groups on a theoretical basis and testing on an empirical ground their effectiveness in the description of different behaviours. However in this way the analysis is subject to a trade-off between theoretical consistency and empirical suitability of the classification. Indeed, the more the typology is related to a specific theory the more it becomes suitable only for the analysis of the phenomena considered by the theory itself. An operational equilibrium must be found above all when the classification is built on data from general surveys on agricultural holdings, carried out without a specific theoretical intent, as in the case of Italian Censuses.

The discussion developed so far leads to the identification of some desirable features that a classification of holdings should have. The few points that follow may be used as tentative guidelines for the definition of typologies of agricultural holdings to be employed for policy analysis purposes.

- a) Typologies should be inclusive of all the production units of the agricultural sector. The nature of agriculture and the use of land as a fundamental asset make possible to carry out the production process also in units managed without a business perspective. As far as a multiplicity of functions is assigned to agriculture besides productive ones, the role of such units becomes relevant for policy making.

- b) Typologies should refer to the institutions dealing with agriculture, i.e. strata of agricultural holdings must be composed on the basis of their institutional features. Structural variables, when used in the classification, would be considered as proxies of institutional differentiation.
- c) Classification of institutions should be coherent with the general framework of the systems of national accounts.
- d) The identification of typologies should be an *a priori* process, carried out on a theoretical ground as far as possible. The choice of the theoretical framework would allow for a reasonable compromise between internal consistency and analytical relevance of the classification.
- e) Typologies should allow for comparison across different years and for identification of movements of groups of holdings from one class to another (Welsh and Moore 1968). From this point of view the use of multivariate methods seems to be more effective in describing differences between groups (with confirmatory analysis) than in identifying them.

To better highlight these points in the next paragraph a stratification of agricultural holdings based on data from the 2000 Italian Census of Agriculture will be presented. The exercise is carried out with reference to Tuscany, an Italian region where agriculture shows many of the typical institutional features that have been discussed above.

4. AN EXAMPLE FOR TUSCANY

The classification of holdings presented in this work was developed to meet the request of the Tuscan Regional Government for an analysis of Census Data suitable as a support to policy making¹⁰. This required the analysis of several features of the Tuscan agriculture such as production and income distribution, labour employment and factors use, orientation to quality and sustainability, forms and evolution in the organization of production process (use of contract works). The general purpose of the study asked for a classification of farms general enough to be relevant to quite different issues, whilst maintaining internal consistency.

A suitable theoretical scheme was found in a classification proposed within the framework of the neo-institutional analysis of firm by Cecchi (1994). Following this approach, the institutional subjects should be classified according to their degree of dependence/autonomy within the relationships characterising the managing process, both inside (hierarchies) and outside the firm (markets). In this vein, typologies are defined combining classification criteria regarding the position the economic subject of each holding has with respect to products, capital and labour markets. The last has been considered on the side of both demand (family labour vs hired labour) and supply (family labour allocation between in-farm and off-farm employment).

To link the proposed typology with the framework of National Accounting systems, a first distinction was introduced between households (that is one-man business) and other institutional units dealing with agriculture (as corporations or public administration bodies). It is worthwhile remarking that such criterion includes in the family farming area all the holdings managed by individuals or groups working together on the basis of some private relationships. As a consequence in our typology the stratum of farms managed by families includes also the production units that within a different interpretive framework would be classified as capitalistic, such as those managed through the exclusive use of wage earning staff.

The other axes of classification was used to split the area of family farming that includes more than 98% of holdings. Two criteria were used to identify those holdings that are likely managed out of a business approach. First, units producing for *self consumption* (absent or limited access to products market) were disentangled from the others. Moreover, the latter

have been subdivided into the two great areas of *professional* vs *non-professional* holdings. In operational terms, following the approach proposed in a previous work (Fabiani and Scarano 1995) holdings were classified as professional when the Standard Gross Margin, measured following EU methodology, was greater than 6 ESU, a floor compatible with the employment of a full time unit of labour. However, the meaning that may be assigned to this axe of classification is of a different nature. Indeed in our conceptual framework professional holdings are those managed by institutional units with a degree of autonomy in the access to capital market compatible with the development of the holdings in a real business perspective.

The relationships with the labour market have been considered to identify different typologies in the professional area. More precisely:

- a) the share of hired labour on total employed work was used to identify *capitalistic* (hired labour greater than 2/3 of total) vs *direct* farms (all the others);
- b) the share of family members working off farm was used to identify *pluriactive* (more than 1/3 of member with prevalent employment off farm) and *esclusive* farms (all the others);
- c) the number of family member with a prevalent employment on farm was used to identify *full time* (at least one members working 180 or more days a year in farm) and *part time* farms (all the others).

Even in the case of labour the terms used to characterize groups, although recalling the terminology of past farm classifications , may be interpreted within the Cecchi's framework as representing relationships of different nature within the relevant market/hierarchy axe.

The resulting distribution of holdings, used agricultural area, standard gross margin and worked days between different groups is presented in table 3. Figures show the high level of concentration of agricultural activities with the group of professional farms producing more than 70% of income (measured as SGM) while accounting for less than 20% of farms. Nevertheless, the holdings for self-consumption together with those classified as non-professional, still account for about 20% of UAA and 15% of SGM. The area of direct farming clearly emerges as the most important in Tuscany.

**TABLE 3 - Number and relative Utilized Agricultural Area, Standard Gross Margin and Worked Days by typology
Tuscany 2000 – Column percentage values**

| Farm typology | | | | | Number of farms | UAA | SGM | WD | |
|---------------|--------|--------------------|-------------------------|-------------------|--------------------|-------|-------|-------|------|
| households | market | profes- sionals | self consumption | | 28,4 | 3,4 | 3,3 | 10,0 | |
| | | | non-professionals | | 51,55 | 15,8 | 11,0 | 32,8 | |
| | | | direct farming | esclusivity | part time | 3,1 | 7,7 | 7,2 | 2,7 |
| | | | | | full time | 7,0 | 28,8 | 35,0 | 25,8 |
| | | | pluriactivity | part time | 3,9 | 8,8 | 8,0 | 3,5 | |
| | | | | full time | 3,6 | 11,3 | 11,8 | 10,0 | |
| | | | capitalistic farming | esclusivity | part time | 0,3 | 2,8 | 2,6 | 1,1 |
| | | | | | full time | 0,2 | 2,3 | 4,3 | 2,8 |
| | | | | pluriactivity | part time | 0,3 | 2,6 | 2,6 | 1,1 |
| | | | | | full time | 0,1 | 0,9 | 1,4 | 0,9 |
| | | | other institutions | non-professionals | | 0,6 | 0,6 | 0,1 | 0,7 |
| | | | | professionals | | 1,0 | 15,2 | 12,8 | 8,6 |
| Total | | | | | 100,0 | 100,0 | 100,0 | 100,0 | |

The average value showed by structural indexes within each group permits to assess the extent to which the classification actually discriminate different forms of agriculture. In table 4 the first two columns refer to average size (in hectares of UAA) and a structural labour

productivity index (average ratio between SGM and WD). Figures vary between strata according to different axes of classification.

**TABLE 4 Structural indexes by farm typology
Tuscany 2000**

| Farm typology | | | | | Average UAA (ha) | SGM/ WD (€) | employed labour (%) | WD per employee |
|---------------|--------|---------------|--------------------------------------|-----------------------|---------------------|-------------------|---------------------------|--------------------|
| households | market | professionals | self consumption | | 0,73 | 20 | 0,0 | - |
| | | | non-professionals | | 1,88 | 21 | 2,2 | 28 |
| | | | direct farming | esclusivity part time | 15,55 | 167 | 7,4 | 84 |
| | | | | full time | 25,18 | 83 | 5,0 | 65 |
| | | | pluriactivity | part time | 13,68 | 142 | 6,0 | 35 |
| | | | | full time | 19,09 | 72 | 6,1 | 33 |
| | | | capitalistic | esclusivity part time | 54,48 | 140 | 92,0 | 109 |
| | | | | full time | 92,40 | 93 | 85,7 | 54 |
| | | | pluriactivity | part time | 46,08 | 138 | 89,1 | 98 |
| | | | | full time | 82,31 | 96 | 84,2 | 148 |
| | | | other institutions non-professionals | | 5,52 | 11 | 100,0 | 141 |
| | | | professionals | | 94,84 | 92 | 100,0 | 80 |
| Total | | | | | 6,13 | 61 | 18,0 | 101 |

Full time capitalistic farms show the highest values for the utilized area; conversely the largest differentiation emerge along the professional vs. non-professional axe of classification with regard to labour productivity. In the last two columns two different indicators of labour use are presented. Again the proposed typology clearly appears to be effective, discriminating between different forms of labour organization: capitalistic farms are those in which labour is essentially supplied by hired workers¹¹ and where hired labour is employed in more stable forms (higher average level of days per worker).

The ability of the proposed typology to support the analysis of different features of the Tuscan agriculture was been tested as well. The average value of indicators about the level of de-activation (i.e. use of contract services to manage tasks in the production process), degree of integration in the forward markets, quality orientation of productions show significant differences across groups.

Moreover, a multi-item score assessing the degree of business orientation of the farm activities was calculated. Qualitative information available in the Census database on a variety of features of production activities were transformed in discrete scores and summed up¹². In table 5 farms assigned to each typology are distributed according to the degree of business orientation

Typologies show different distributions. The area of capitalistic agriculture, as expected, seems to be the more business oriented in the management of farms. Conversely the direct farming area seems to include to a greater extent holdings managed following a multiplicity of goals.

A comparison with the 1990 Census was carried out as well. In fact, the criteria followed in the empirical implementation of the typology allowed for a full replication of the method. The results indicate an overall strengthening of the area of direct farming, whose cultivated land and income increases between the two censuses while number of farms and used labour decrease. An opposite trend affects capitalistic farms.

**TABLE 5 Business orientation by farm typology
Tuscany 2000- Row percentage values**

| Tuscany 2000 - Row percentage values | | | | | |
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6. CONCLUDING REMARKS

Following the debate among Italian agricultural economists on the classification of farms, a short historical outline of the evolution of the institutional structure of agriculture in Italy has been carried out. As far as the economic development has involved agriculture the institutional features of the sector have become more complex, with a wider differentiation of the subjects dealing with agriculture. Policy makers need to better understand this evolution: as a consequence the issue of farm classification maintains its relevance.

Starting from a critical discussion of different empirical works about the classification of farms in Italy, some desirable feature the classification criteria should present have been proposed. A stratification of Tuscan farms carried out on the 2000 Census data with sector analysis purposes, have been proposed as an example of the suggested approach. Two major points are recalled here.

The first is about the reference to the general framework of National Accounting system as a starting point in classification of farms. In our example this has been made at a very elementary level, only distinguishing between households and other institutions managing the agricultural holdings. However, as far as standard classifications of institutional sectors are more detailed they may be used when relevant to the objective of classification. It is worth stressing that NA concepts form a framework allowing for comparison between different countries/regions and through years. Moreover, results of classification exercises may be more useful in building models for the analysis of agricultural policies (such as SAMs and CGEs) linking structural to macroeconomic data.

The second remark addresses the issue of the relationship between classifications and theoretical frameworks.. Even if in most reviewed works the empirical side of the analysis tends to be prevailing, a clear connexion with a theory is still important. Empirical criteria should be used to implement a typology defined on the basis of *a priori* theoretical assumption. Such an approach is worthwhile for at least two reasons. First, it addresses the analysis towards typologies more relevant for the economic phenomena that are studied. Second, the interpretation of results is more straightforward and transparent, increasing the effectiveness of the proposed typology in achieving its objectives.

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¹ Benedetto Rocchi is lecturer, Department of Agricultural and Resource Economics, University of Florence. Gianluca Stefani is Associate Professor, Department of Agricultural and Resource Economics, University of Florence. Corresponding author: rocchi@unifi.it. Paper presented at the EAAE Seminar on Institutional Units in Agriculture, held in Wye, UK, April 9-10, 2005

² A thorough anthology of this stream of the literature can be found in (Bertolini and Meloni 1978a).

³ At the time the classification was designed the fascist regime was apparently interested in limiting the scope of form of management which entailed a large number of irregular rural workers that had given rise to strong leftist organisation in the 20s. This objective should have been pursued through a promotion of farms directly run by the farmer considered as a superior social type of farmer. Actually, besides the regime propaganda the strong interest of large land owners and latifundists prevent any serious attempt to support this type of farming through land reclamation and land reform processes (Dini and Stefani, 1990)

⁴ Even if the Italy's National Institute of Statistics adopts a different terminology, the different management forms used to display Census results are defined in the same way: peasant form are officially defined "direct" farming while the word "capitalistic" is replaced by the expression "farming with only hired labour".

⁵ Part time farming is identified by less than 50% of family labour employed in farming *and* by the absence of a member of the family with full time employment in farming (Brusco 1979).

⁶ Several contributions could be cited on this issue: see for example (Gorgoni 1980, Brunori 1990, Corsi 1992) for the theoretical debate and (De Benedictis 1990, Mantino 1995) for a more empirically oriented approach to the issue of family farms classification.

⁷ See for instance the works collected in (Mantino 1995)

⁸ The use of multivariate method for the classification of agricultural holdings had been previously proposed by Anania (1981).

⁹ The same remark could be made for subdivisions of the agriculture itself.

¹⁰ A first version of the typology was presented in (Pagni et al, 2004). Figures presented here are extracted from the forthcoming final report.

¹¹ Conversely, in this group were included also holdings where family labour is employed too.

¹² Different scores have been assigned on the basis of presence and type of accounting records, IT use, participation in producer associations, type of crop techniques and education level of the reference person. The internal coherence of the multi-item score was tested computing the Cronbach Alfa index. Different degrees of business orientation were defined by ceiling values of the index. Being the index an interval scale, different degrees must be

interpreted as a measure of relative distance between groups, rather than an absolute measure of business orientation: in other words the relative distance between high and medium group in relative terms is the same of that existing between medium and low groups. (Malothra and Birks 1999)